



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,633	10/17/2003	Tatsushi Higuchi	981491A	8920
38834	7590	10/18/2007	EXAMINER	
WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP			HENN, TIMOTHY J	
1250 CONNECTICUT AVENUE, NW			ART UNIT	PAPER NUMBER
SUITE 700			2622	
WASHINGTON, DC 20036			MAIL DATE	DELIVERY MODE
			10/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/686,633	HIGUCHI ET AL.	
Examiner	Art Unit		
Timothy J. Henn	2622		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 19 September 2007.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,2,4-11 and 13-18 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1,2,4-11 and 13-18 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 17 October 2003 is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) Paper No(s)/Mail Date. ____.
3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date 5) Notice of Informal Patent Application
6) Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see response, filed 19 September 2007, have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Chigira (US 5,298,933).

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 2, 4-8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (US 5,796,428) in view of Yokota et al. (JP 03-089682) in view of Chigira (US 5,298,933).

[claim 1]

Regarding claim 1, Matsumoto discloses an electronic image pickup apparatus comprising: a taking lens including a plurality of lenses (Figure 2, Item 202 and Figure 3, Item 301); an image pickup device for effecting photoelectric conversion of an object light after passing through the taking lens unit (Figure 2, Item 203); recording means for recording image pickup signal obtained by effecting photoelectric conversion at the image pickup device (Figure 1, Item 104 or 109) and an image display section for displaying an image located on a back surface of an apparatus body (Figure 3, Item 305) wherein the taking lens unit is disposed right in front of the image display section

(Figure 3). However, Matsumoto does not disclose an optical axis alternation means for altering the direction of the image pickup optical axis as claimed.

Yokota discloses an electronic image pickup apparatus including a reflecting mirror disposed in a optical path of a taking lens unit which alters the direction of the optical axis and allows for a very thin profile electronic image pickup apparatus to be realized (Figure 1, Item 3; Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a reflecting mirror or "optical axis reflecting means" in the camera of Matsumoto to reduce the thickness of the Matsumoto camera. While Matsumoto teaches performing focus control by driving a lens (e.g. Figure 2, Item 205; c. 8, ll. 44-62), but does not explicitly show a lens displacing mechanism and driving source as claimed.

Chigira discloses a similar camera apparatus including a focus system including a lens (Figure 1, Item 5), a lens displacing mechanism (Figure 1 item 11a, 12, 7c) and a driving source for driving the lens displacing mechanism disposed on a lateral side of a taking lens unit (Figure 1, Item 11; c. 3, ll. 53-68). Chigira further discloses a zoom lens including a similar lens displacing mechanism and driving source (Figure 1, Items 3, 6c, 8 and 8a). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a lens moving system as described by Chigira to move the focus lens of Matsumoto in view of Yokota without vibration and excess noise while moving the lens device (c. 2, ll. 1-11).

[claim 2]

Regarding claim 2, Matsumoto discloses a light quantity adjusting device which mechanically adjusts the quantity of light passing through the taking lens unit (Figure 2, Item 201). Yokota discloses a similar device (Figure 1, Items 2 and 4) disposed between the optical axis alteration means and the image pickup device (Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place the light quantity adjusting device in a position between the image pickup device and the optical axis alteration means as claimed.

[claim 4]

Regarding claim 4, Matsumoto in view of Yokota discloses a taking lens disposed in the apparatus body such that the image pickup optical axis altered by the optical axis alteration means is plumb in the posture of the apparatus body at the time of customary taking of the image (Yokota, Figure 1) and wherein the image pickup device is disposed in the vicinity of the bottom surface of the apparatus body (Matsumoto, Figure 3; Yokota, Figure 1; The examiner notes that Yokota discloses altering an optical axis such that the image pickup device is disposed below the exposed camera lens. In making such an alteration to the camera of Matsumoto the image pickup device would necessarily be located in the vicinity of the bottom surface as claimed).

[claim 6]

Regarding claim 5, Matsumoto in view of Yokota does not explicitly disclose an electronic circuit board mainly mounting an image pickup circuit for processing image pickup signal of the image pickup device located between the image pickup device and the bottom surface of the apparatus body. Official Notice is taken that it is well known in

the camera art to provide an electronic circuit board mounting an image pickup circuit for processing image pickup signals and which is mounted below an image pickup device to provide properly processed image signals by performing interpolation, gain control, white balance, etc. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an electronic circuit board mounting an image processing circuit as claimed to properly process the image captured by the image pickup device of Matsumoto in view of Yokota.

[claim 6]

Regarding claim 6, Yokota discloses an alternate embodiment in which the altered image pickup axis is horizontal in posture of the apparatus body at the time of customary image taking (Figure 3).

[claim 7]

Regarding claim 7, Matsumoto in view of Yokota does not explicitly disclose an electronic circuit board mainly mounting an image pickup circuit for processing image pickup signal of the image pickup device located between the taking lens unit and the image display section. Official Notice is taken that it is well known in the camera art to provide an electronic circuit board mounting an image pickup circuit for processing image pickup signals to provide properly processed image signals by performing interpolation, gain control, white balance, etc. and to display the processed image signal using an image display device to allow the user to review the captured image signal. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an electronic circuit board mounting an image processing

circuit as claimed to process the image captured by the image pickup device of Matsumoto in view of Yokota and to display the resulting image. The examiner notes that in order to display the processed image, the image processing circuit must be placed between the image pickup device and the image display device so that signals from the image pickup device which passed through the taking lens unit are sent to the image processing device prior to being sent to the image display device. It is further noted that the claims as written do not require the electric circuit board to be physically located between the taking lens unit and the image display section as claimed.

[claim 8]

Regarding claim 8, see claim 7.

[claim 14]

Regarding claim 14, Matsumoto in view of Yokota does not disclose an IR cut film vapor deposited on the reflective surface. However, Official Notice is taken that using IR cut films on optical elements in an electronic image capture system is well known because infrared light can damage sensitive components of the image sensor. Therefore it would have been obvious to provide the IR cut film on the mirror because installing an extra optical element with IR filtering properties would increase the overall size of the optical system, which is not desirable in a compact camera.

4. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (US 5,796,428) in view of Yokota et al. (JP 03-089682) in view of Chigira (US 5,298,933) in view of Wakabayashi et al. (US 5,748,238).

[claim 9]

Referring to claim 9, Matsumoto in view of Yokota in view of Chigira does not disclose a means for cutting unwanted external light in the vicinity of part of the taking lens unit which an object light is incident.

However, Wakabayashi discloses a taking lens 11 disposed in a recess surrounded by the protruding edges of the camera body on three sides, and the protruding edge of the lens cover 10 on the remaining side. Having such a configuration would result in a hood around the lens cutting unwanted external light in the vicinity of the taking lens. Therefore it would have been obvious to position the taking lens of Matsumoto in view of Yokota in view of Chigira in such a manner that the protruding sides of the camera body would extend beyond the taking lens shielding it from unwanted light reducing lens flare.

[claim 10]

Referring to claim 10, Matsumoto in view of Yokota in view of Chigira does not disclose that a protrusion comprising an edge portion of a lens cover that is displaceable between a position for concealing the lens and a position for opening the same.

However, this feature is well known as taught by Wakabayashi. Figure 3 of Wakabayashi shows an image taking lens 11 and an edge portion of a lens cover 10 disposed in front of the image taking lens for opening as shown in figure 3 and for concealing the lens as shown in figure 6 to protect it. Therefore it would have been obvious to provide the lens cover of Wakabayashi with the image capture system of

Matsumoto in view of Yokota in view of Chigira to provide protection for the lens from scratches and other damages but also because the protruding edge of the cover would provide shielding from unwanted light around the taking lens reducing the effects of lens flare.

[claim 11]

Referring to claim 11, Wakabayashi discloses a protrusion which is integrally formed as a protrusion on an external enclosure of the apparatus body (Figure 3).

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (US 5,796,428) in view of Yokota et al. (JP 03-089682) in view of Chigira (US 5,298,933) in view of Kikuchi (US 5,838,374).

[claim 13]

Referring to claim 13, Matsumoto in view of Yokota in view of Chigira does not disclose a means of moving the image sensor along the optical axis. However, Kikuchi discloses that moving an image sensor along an optical axis using a linear motor is a well known method of auto focus (Col. 13, Lines 60-67). Therefore it would have been obvious to provide a means of moving the image sensor of Matsumoto in view of Yokota in view of Chigira along the optical axis as taught by Kikuchi to properly focus the image incident upon the sensor.

6. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (US 5,796,428) in view of Yokota et al. (JP 03-089682) in view of

Chigira (US 5,298,933) in view of Orbach et al. (US 4,732,438).

[claim 15]

Regarding claim 15, Matsumoto in view of Yokota in view of Chigira does not disclose a beam splitter for splitting an incident light into a plurality of components, rays of light reflected at a semi-transparent surface of the beam splitter entering the image pickup device and rays of light passing through the semi-transparent surface of the beam splitter entering an optical finder for visually recognizing an object.

However, Orbach shows an image capture configuration in figure 3 having a taking lens unit 12 opposing an optical viewfinding window 28 where object light is passed straight through a beam splitter 24 directly to the viewer's eye. Therefore it would have been obvious to provide the optical viewfinder of Orbach with the image capture system of Matsumoto in view of Yokota in view of Chigira to allow object light to pass straight from the image taking lens to the viewer's eye along with reflecting light to the image pickup unit because optical viewfinder systems require no power to operate and would save battery power opposed to an LCD giving the camera a longer operation time.

[claim 16]

Regarding claim 16, see claim 15.

[claim 17]

Regarding claim 17, Matsumoto in view of Yokota in view of Chigira does not disclose an optical viewfinder as claimed. Orbach shows an image capture configuration in figure 3 having a taking lens unit 12 opposing an optical viewfinding

window 28 where object light is passed straight through a beam splitter 24 directly to the viewer's eye. Therefore it would have been obvious to provide the optical viewfinder of Orbach with the image capture system of Matsumoto in view of Yokota in view of Chigira to allow object light to pass straight from the image taking lens to the viewer's eye along with reflecting light to the image pickup unit because optical viewfinder systems require no power to operate and would save battery power opposed to an LCD giving the camera a longer operation time. Orbach however discloses a fixed beam splitter instead of a movable optical axis alteration means.

Official Notice is taken that it is well known in the art to use a moveable mirror (i.e. optical axis alteration means) to selectively direct light between an optical viewfinder and an image pickup device since the use of a fixed mirror does not reduce the amount of light entering the optical viewfinder and image pickup device therefore resulting in higher quality images. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a movable mirror as claimed to create higher quality images by selectively redirecting all incoming light instead of splitting it into two different optical paths.

[claim 18]

Regarding claim 18, see claim 17.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Henn whose telephone number is (571) 272-7310. The examiner can normally be reached on M-F 11-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



TJH
10/12/2007